

Field Water System Vulnerability Assessments

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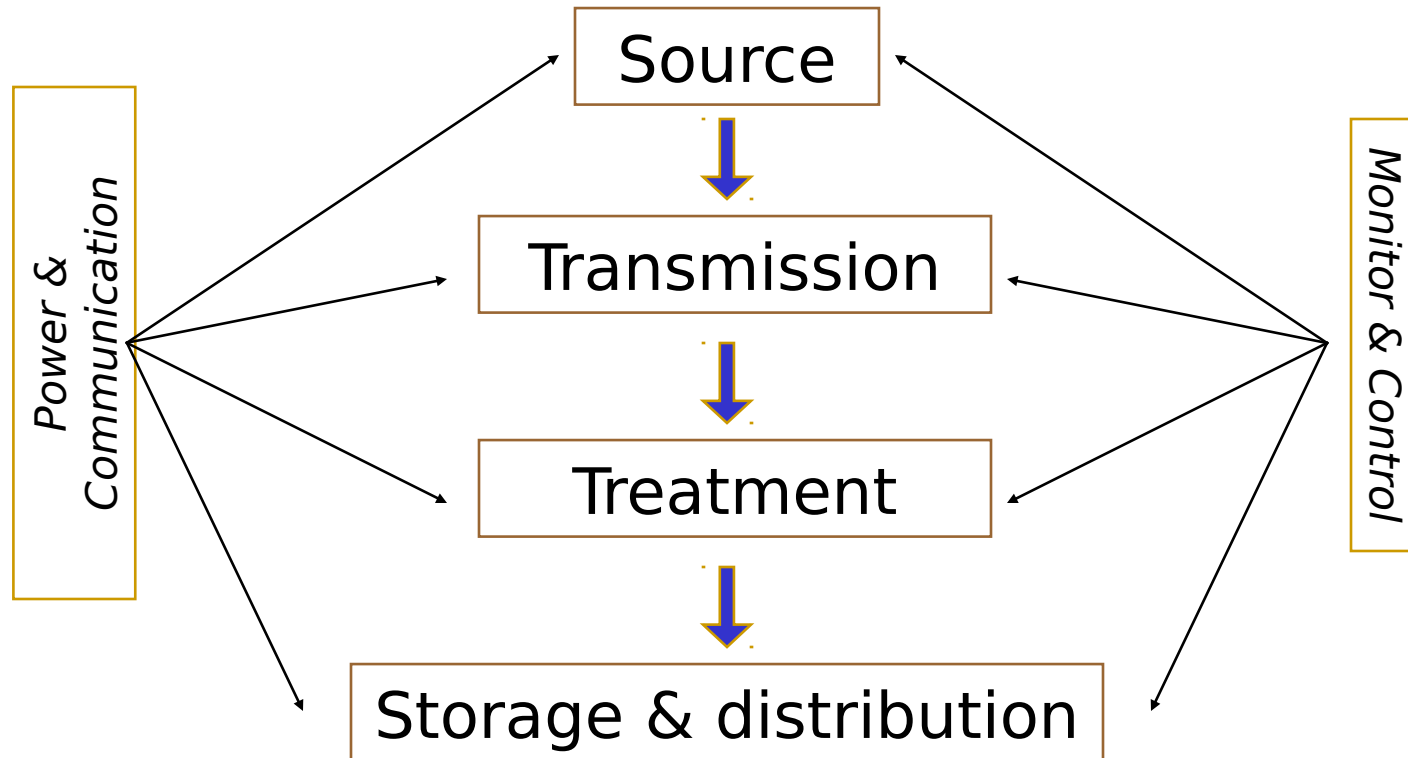


Presentation Agenda

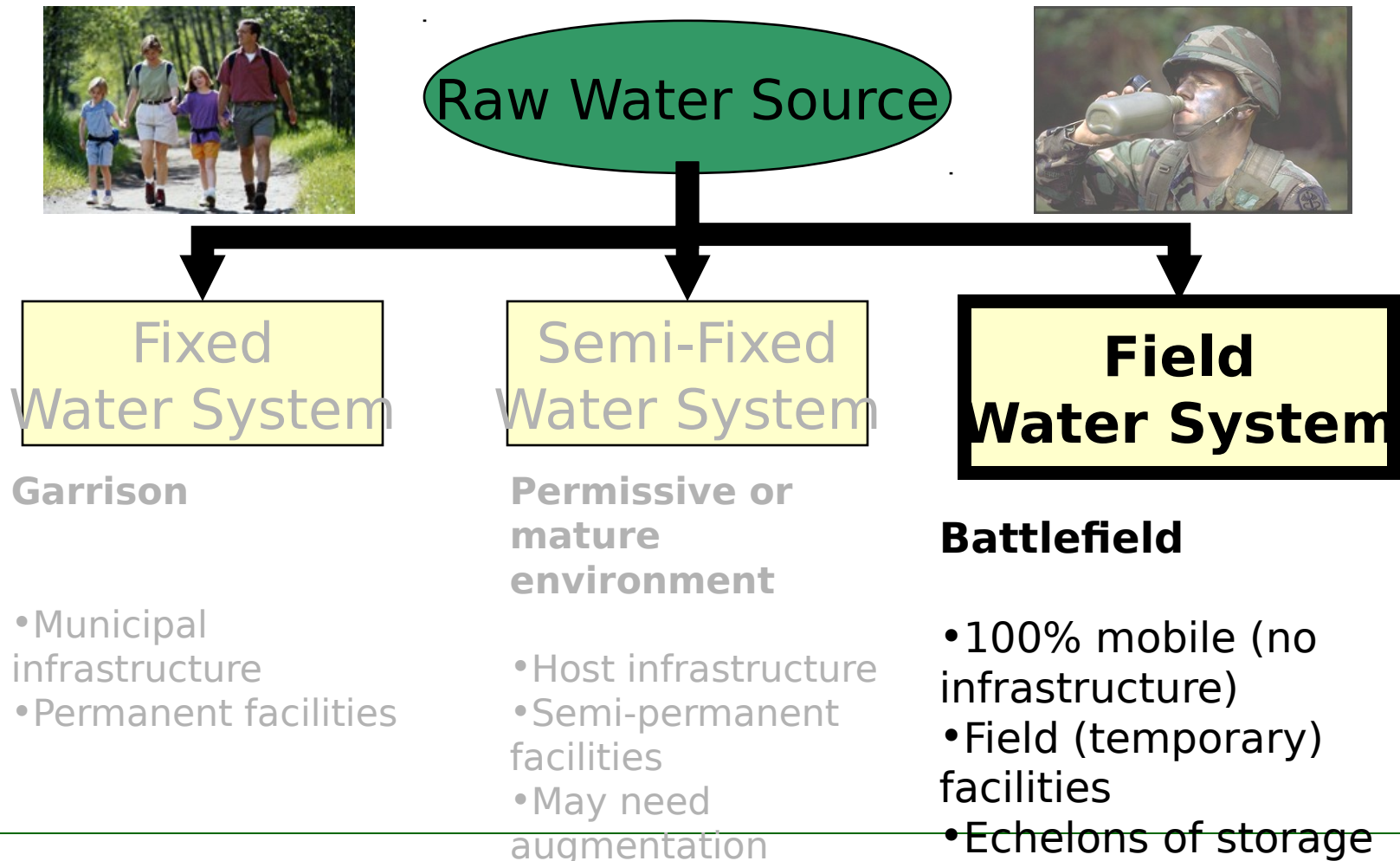
- Water Supply Principles
- Field Water Supply System
- Vulnerability Assessments



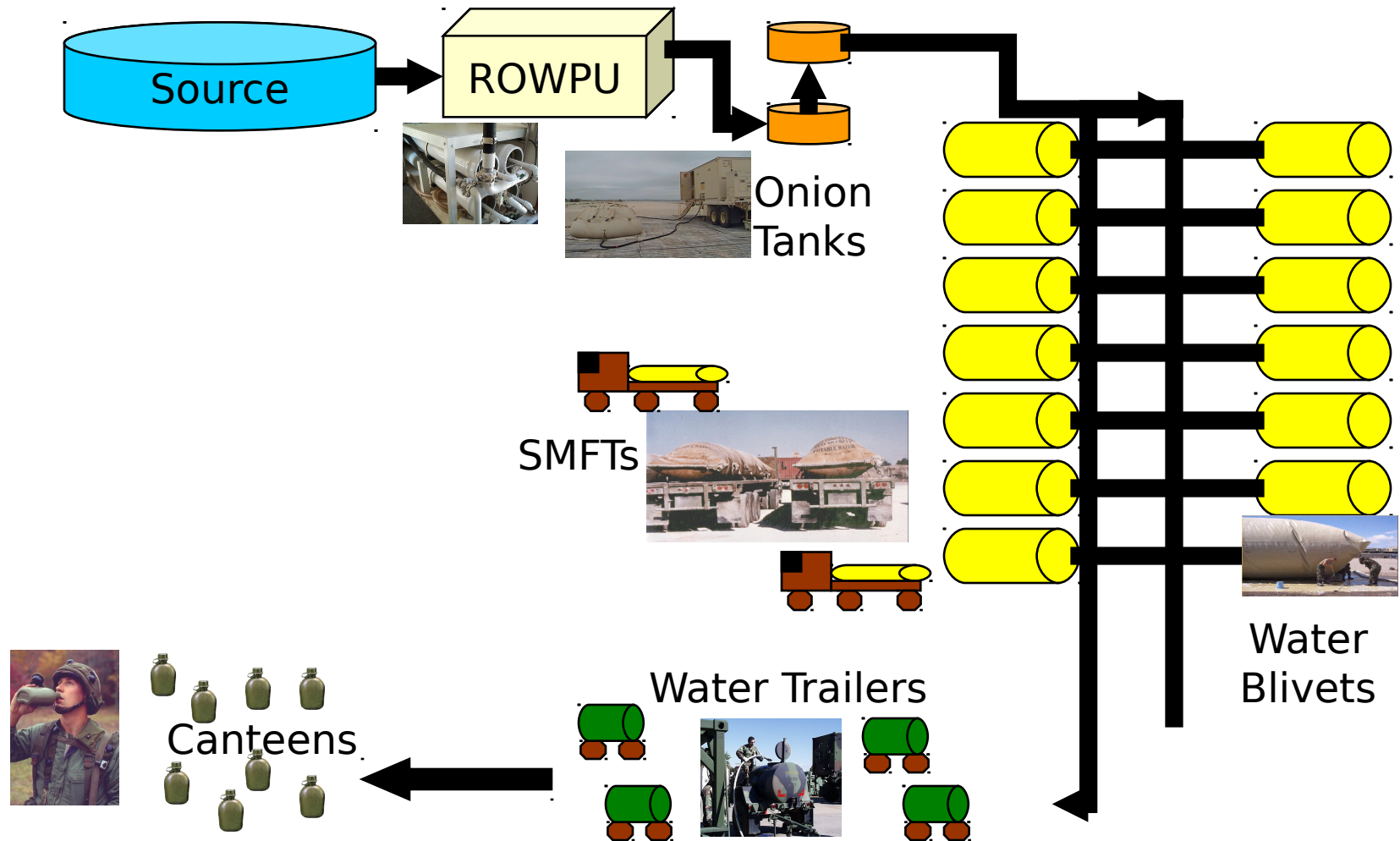
Basic Water Supply Principles



Classes of Military Water Systems



Field Water System



Current Force Water Equipment

Production

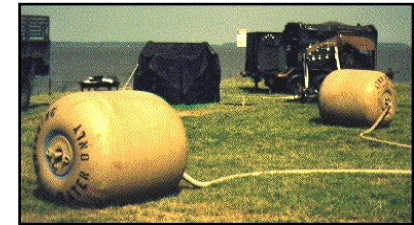
ROWPU - Reverse Osmosis Water Purification Unit (600 and 3000 gph)



600 GPH ROWPU - Divisions and below (400 GPH on Salt water)



3000 GPH ROWPU - EAD (2,000 GPH on salt water)



Water Buffalo (400 Gal)

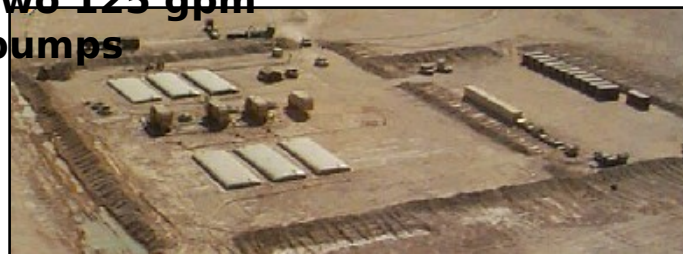


SMFTs - 3K & 5K

FAWPSS
Six 500 Gal drums,
one 125 GPM pump,
and hoses



TWDS--10 miles of
hoseline; six 600
GPM pumps; two
20K tanks;
two 125 gpm
pumps



SDS come in 800K, 300K, 40K and 20K sizes complete with bags, hoses, & pumps.

Distribution

TWDS - Tactical Water Distro System (10 mi hoseline sets)

SMFT - Semi-Trailer Mounted Fabric Tank (3k and 5k Gal)

FAWPSS - Forward Area Water Point Supply System

Water Buffalo - 400 Gal

M1042 Water Trailer

SDS - Storage & Distro Systems; 50K and 20K bags

Onion Bag - 3,000 Gal thin skinned bag for temp storage

1500 GPH Tactical Water Purification System (TWPS)



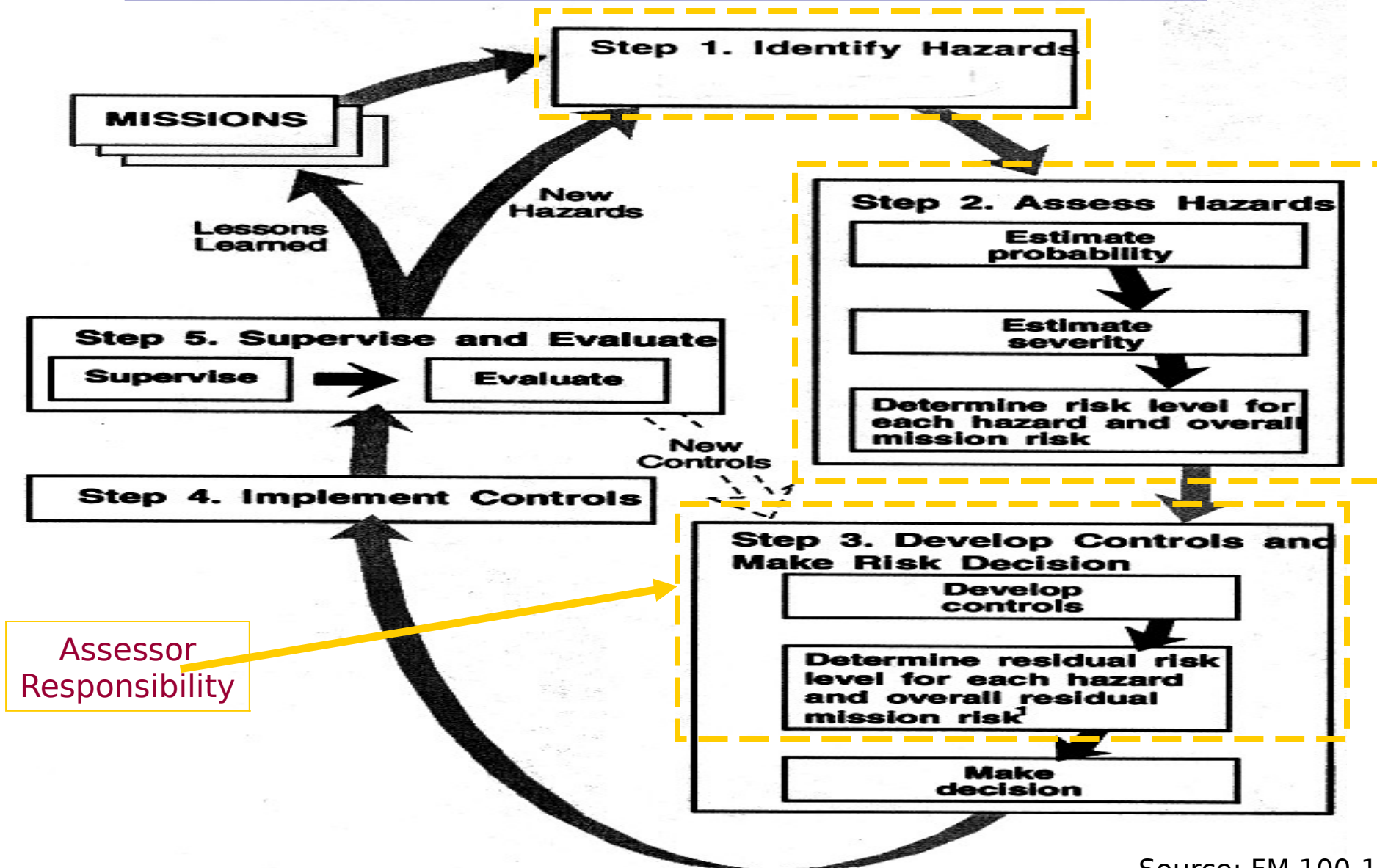
Lightweight Water Purifier (LWP)



Field WSVAs

- Mechanism to ID and manage risk
- Commander's tool to protect personnel and equipment
- TB MED 577 (Appendix E) provides instructions and tools

Army Risk Management Process



Step 1 – ID Hazards

- Eyes of the Aggressor
- Water Supply Assets – Inspect, Interview, Evaluate
- Evaluate Security

Target Field Water Supply Assets

Target Component	Elements of Concern
Water sources	Existing water systems, surface water (lakes, rivers, springs), ground water (community wells, rural wells, drilled wells), bottled/package water, contamination from toxic release
Intakes and pumping stations	RO-based WPS intakes, hoses, valves, pumping and distribution stations, chemical storage, chemical injectors (hypo-chlorination tanks)
Treatment units	600-, 1500-, and 3000-gph ROWPU and associated equipment, bottled and packaged water production facilities, host nation treatment plants
Distribution systems	Water supply points, cross connections in laundry and shower services, valves, hose lines, tactical distribution systems, access points within distribution system, host nation distribution systems
Water storage	20,000- and 50,000-gal collapsible fabric tanks, 3000-gal onion tanks, water tankers and trailers, bottled/package water facilities
Power supply	Generators, transmission lines, transformers
Communication	

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Field Water System Security

Physical Security	fences, locks, signs, bars on windows, lighting, vehicle barriers, anti-climb devices on ladders, screens on vents/drains/overflow outlets, security cameras, intrusion detection systems
Operational Security	security patrols/inspections, operational and maintenance rounds, required ID badges for non-uniformed personnel, parking policy, set-back distance
Other System Protection	chlorine residual test frequency, other routine water quality sampling, shut-off valves, availability of replacement parts, CBRNE filter sets, fire suppression equipment
Practices that Monitor Protection	equipment calibration, routine quality control checks, active maintenance/cleaning programs, daily inspections, ID checks, testing of alarms, incident response rehearsals, functional checks of emergency/back-up equipment, monitoring sick call, an aid station, and medical facility illness trends

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Step 2 – Assess Hazards

		HAZARD PROBABILITY				
HAZARD SEVERITY		Highly Likely	Likely	Probable	Questionable	Unlikely
	Catastrophic	Extremely High	Extremely High	High	High	Moderate
	Critical	Extremely High	High	High	Moderate	Low
	Marginal	High	Moderate	Moderate	Low	Low
	Negligible	Moderate	Low	Low	Low	Low

Estimate Hazard Probability

A Highly Likely	High value target. Easy to execute. No or minimal deterrent safeguards. No specialized training required and very little equipment required. (80-100% success rate)
B Likely	High value target. Low level of training needed, and supplies are easily obtained. Minimal protective measures in place. (60-80% success rate)
C Probable	Any target. Capability exists and current security measures are inadequate to deter. (40-60% success rate)
D Questionable	Remotely possible. Specialized knowledge, training, and equipment required. Information may be obtained by an outsider from generic sources. (20-40% success rate)
E Unlikely	Can assume aggressor would not attempt this or would not be successful due to lack of capability and existing control measures. Relies on facts not easily obtained by an installation outsider. (0-20% success rate)

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Estimate Hazard Severity

	Physical Destruction	Contamination
I Catastrophic	•Complete loss of ability to provide safe drinking water to large part of or entire AO •Will take more than 2 days to restore service	•Medical threat - causes death or widespread severe illness in all or large part of AO •Will result in mission failure
II Critical	•Severely damages ability to provide an adequate volume of safe drinking water to specific areas in the AO •Service restoration will take more than 1 day	•Health threat - causes severe illness in some individual soldiers, or minor illness in many, but debilitating none or few •Reduces multiple units' effectiveness, makes mission accomplishment questionable
III Marginal	•Can replace damaged section/unit or bypass damage and still produce water with delay of 1 day or less •Can still meet 75% of required daily production	•Health threat - causes minor illness in a few susceptible individuals and/or units •Affects taste and odor only •Mission accomplishment not jeopardized
IV Negligible	•Little or no adverse impact on ability to provide an adequate volume of safe drinking water •Little property damage •Does not affect normal equipment operation	•No apparent adverse effects on individual or unit health •Disinfectant residual can destroy contaminant type and concentration

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Step 3 – Develop and Recommend Risk Reduction

- Initial Risk
- Improvement
- Residual Risk

ID #	Element	Initial Risk	Recommended Improvements	Residual Risk

Field WSVAs

- TB MED 577 (Appendix E) provides instructions
- DA Form 7575 – FWSVA Worksheet
- DA Form 7576 – FWSVA Summary Data Sheet

Do You See Vulnerabilities?



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Questions?

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